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THE PLANKTON OF LAKE MAXINKUCKEE, INDIANA

By CHANCEY JUDAY

It is desirable to present here a brief summary of the plankton observations made on Lake Maxinkuckee during August, 1899. These observations were made as a part of the field investigations of the U. S. Fish Commission.

The following results were obtained:

1. Regular observations were made during August at three different stations and these showed a decrease in the quantity of plankton of from 36 per cent to almost 50 per cent. This decrease was due to a large decrease of the phytoplankton. There was a slight increase of crustacea. Cyclops was the predominant crustacean.

2. The plankton was confined almost wholly to the upper 12 meters. Only *Corethra* larvae were found regularly below this depth. The 0-1 m. layer contained about 48 per cent of the entire quantity. This is preeminently the region for phytoplankton, young Cyclops, and nauplii. The 0-3 m. layer contained about 68 per cent of the entire quantity of plankton.

3. Adult *Diaptomus minutus* and *Daphnia retrocurva* were rarely found above 3 m. during the day. *Daphnia pulex* was found in and below the thermocline.

4. Only one set of observations was made at night. Although the entire quantity of plankton in the 0-1 m. layer was smaller than that obtained during the previous afternoon, there was a distinct increase in the crustacea. *Epischura lacustris*, *Leptodora hyalina*, and adult *Daphnia retrocurva* were found in the 0-1 m. layer at night but not during the day. Also, there was an increase in the number of adult Cyclops over day conditions.

5. Station II was located in a small basin having a maximum depth of 12.8 m. and entirely separated from the main basin of the lake by a considerable area where the water is 2 m. or less in depth. The bottom temperature was slightly lower here than in the deepest

part of the lake (26 m.). During each of the four weeks the observations continued, one set of hauls was made in this small basin for purposes of comparison with hauls from Station I in the deepest part of the lake. The quantity of plankton obtained was smaller than the weekly average from corresponding depths at Station I. Hauls made at five stations in the main basin of the lake, besides the two regular stations, showed that the plankton was very evenly distributed.

The following is a list of the Cladocera observed :

<i>Daphnia pulex</i> De Geer, var. <i>pulicaria</i> Forbes.	<i>Pleuroxus procurvatus</i> Birge.
<i>Daphnia retrocurva</i> Forbes.	<i>Diaphanosoma brachyurum</i> Liévin.
<i>Ceriodaphnia lacustris</i> Birge.	<i>Ilyocryptus longiremis</i> Sars.
<i>Sida crystallina</i> O. F. Müller.	<i>Alona guttata</i> Sars.
<i>Acropus harpae</i> Baird.	<i>Leptodora hyalina</i> Lilljeborg.

Prof. C. Dwight Marsh determined the following list of Copepods observed :

<i>Cyclops Leuckarti</i> Sars.	<i>Diaptomus minutus</i> Lilljeborg.
<i>Cyclops prasinus</i> Fischer.	<i>Epischura lacustris</i> Forbes.